

WHAT IS CLAIMED IS:

1. A method for communicating between a base station and a mobile station through a designated channel, comprising the steps of:

5 transmitting an access parameter message, including fields indicating a preamble duration and a slot duration, where the slot duration is a length of a multiple of a predetermined slot duration, from the base station to the mobile station, the base station previously knowing each start time point of each slot duration that is a multiple of the predetermined slot duration;

10 transmitting a control message including fields indicating a designated channel number and a data rate from the base station to the mobile station over a common channel;

receiving, in the mobile station, the control message and transmitting to the base station an access probe including a preamble having the preamble
15 duration and a succeeding response message beginning at one of the start time points of the slot duration that is a multiple of the predetermined slot duration at the data rate through a designated channel associated with the designated channel number in the control message; and

20 determining in the base station whether the preamble of the access probe is received, beginning at each of the start time points of the slot durations that is a multiple of the predetermined slot duration.

2. A base station device comprising:

25 a forward common channel transmitter for transmitting through a forward common channel an access parameter message including preamble duration information and information about a second slot duration having a length of a multiple of a given first slot duration; and

a controller for examining whether an access probe including a preamble signal having the preamble duration and a succeeding access message is received, beginning at each start time point of slots based on the second slot duration.

5 3. The base station device as claimed in claim 2, wherein the first slot duration is 1.25ms.

10 4. The base station device as claimed in claim 2, wherein the forward common channel transmitter transmits a control message including a designated channel number for a reverse common channel to a mobile station over a forward common channel.

15 5. The base station device as claimed in claim 4, wherein the mobile station receives the control message and transmits the access probe over a designated channel associated with the designated channel number in the control message beginning at one of the start time points of the slots based on the second slot duration.

20 6. The base station device as claimed in claim 5, wherein the controller transmits a preamble acquisition fail indicator to the mobile station, upon failure to detect a preamble signal of the access probe until the preamble duration has elapsed from the slot start time point.

25 7. The base station device as claimed in claim 6, wherein the preamble acquisition fail indicator is implemented by transmitting power control commands in a specific pattern.

8. The base station device as claimed in claim 6, wherein the preamble acquisition fail indicator is implemented by discontinuing transmission of power control commands for specific duration.

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~~9.~~ A mobile station device comprising:

a forward common channel receiver for receiving through a forward common channel an access parameter message including preamble duration information and information about a second slot duration having a length of a multiple of a given first slot duration; and

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a reverse common channel transmitter for transmitting an access probe including a preamble signal having the preamble duration and a succeeding access message to a base station over a reverse common channel beginning at one of a plurality of start time points of the slots having the second slot duration, thereby accessing the base station.

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10. The mobile station device as claimed in claim 9, wherein the first slot duration is 1.25ms.

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11. The mobile station device as claimed in claim 9, wherein the reversed common channel is a reverse common control channel (R-CCCH).

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12. The mobile station device as claimed in claim 9, wherein the reverse common channel transmitter retransmits the access probe beginning at a start time point of the next slot, upon detecting a preamble acquisition fail indicator from the base station after transmitting the preamble of the access probe.

13. The mobile station device as claimed in claim 12, wherein the preamble acquisition fail indicator is detected by receiving power control commands in a specific pattern.

14. The mobile station device as claimed in claim 12, wherein the preamble acquisition fail indicator is detected by receiving no power control command for a specific time duration.

5 15. The mobile station device as claimed in claim 9, wherein the reverse common channel transmitter transmits, upon receipt of a control message including a designated channel number for a reverse common channel from the base station, the access probe over a designated channel associated with the designated channel number in the control message beginning at one of the start
10 time points of the slots having the second slot duration.

~~16.~~ An access communication device for a mobile communication system, comprising:

15 a base station device for transmitting an access parameter message including preamble duration information and information about a second slot duration having a length of a multiple of a given first slot duration, and receiving an access probe including a preamble signal having the preamble duration and a succeeding access message at one of the start time points of slots based on the second slot duration; and

20 a mobile station device for receiving the access parameter message, and transmitting the access probe beginning at one of the start time points of the slots based on the second slot duration.

25 ~~17.~~ A communication method for a base station, comprising the steps of:

transmitting to a mobile station an access parameter message including preamble duration information and information about second slot duration having a length of a multiple of a given first slot duration;

transmitting to the mobile station a control message including a designated channel number for a reverse common channel;

determining whether a preamble signal of an access probe is received, by assigning a demodulator associated with the designated channel number beginning at each start time point of slot boundaries based on the second slot duration; and

upon receipt of the preamble signal, receiving a response message for the control message after a lapse of the preamble duration.

18. The communication method as claimed in claim 17, further comprising the step of transmitting a preamble acquisition fail indicator to the mobile station, upon failure to receive the preamble signal.

19. The communication method as claimed in claim 17, wherein the designated channel number is a specific long code number.

20. The communication method as claimed in claim 17, wherein the first slot duration is 1.25ms.

~~21.~~ A communication method for a mobile station, comprising the steps of:

receiving from a base station an access parameter message including preamble duration information and information about a second slot duration having a length of a multiple of a given first slot duration;

receiving from the base station a control message including information about a designated channel for a reverse common channel;

transmitting to the base station a preamble signal for the preamble duration beginning at one of a plurality of start time points of slots based on the second slot duration; and

after transmitting the preamble signal, consecutively transmitting a response message for the control message to the base station over a designated channel associated with the designated channel number.

5 22. The communication method as claimed in claim 21, further comprising the step of retransmitting the preamble signal and the response message beginning at a start time point of the next slot, upon receipt of a preamble acquisition fail indicator from the base station.

10 23. The communication method as claimed in claim 21, wherein the designated channel number is a specific long code number.

 24. The communication method as claimed in claim 21, wherein the first slot duration is 1.25ms.

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~~25.~~ An access communication method for a mobile communication system, comprising the steps of:

transmitting an access parameter message including preamble duration information and information about a second slot duration having a length of a multiple of a given first slot duration from a base station to a mobile station;

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transmitting a control message including a designated channel number for a reverse common channel from the base station to the mobile station;

upon receipt of the control message, transmitting, in the mobile station, an access probe including a preamble signal having the preamble duration and a succeeding response message over a designated channel associated with the designated channel number beginning at one of a plurality of start time points of slots based on the second slot duration; and

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after transmitting the control message, determining in the base station whether a preamble signal of the access probe is received, by assigning a

demodulator associated with the designated channel number beginning at each start time point of slots based on the second slot duration; and

upon receipt of the preamble signal, receiving in the base station the response message for the control message after a lapse of the preamble duration.